

ART. XX.—*Australian Termites (Isoptera). Notes on Stolotermes, Calotermes, and Coptotermes, with descriptions of new species.*

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The following consists of (a) a brief review of the known species of *Stolotermes* and their distribution, (b) notes on six hitherto described species of *Calotermes* and descriptions of two proposed new species and one new variety, (c) notes on the six hitherto described Australian *Coptotermes* and descriptions of two proposed new species and one new variety. In the last mentioned genus there are several still undescribed species which it is considered inadvisable to deal with until complete nest-series are available for study.

For translations from the German authors mentioned in the text I am greatly indebted to Miss Lind and P. Sharman, Esq., M.Sc., both of the Presbyterian Ladies' College, East Melbourne.

Genus *Stolotermes*.

STOLOTERMES VICTORIENSIS Hill.

Proc. Linn. Soc. N.S.W., xli., p. 433, 1921.

This species has been taken in rotten logs near mountain streams in the Ferntree Gully and Gembrook Districts, Victoria, on several occasions during the past few years. The colonies are always small and, as a rule, the individuals composing them are scattered throughout several feet of rambling slit-like galleries. The soldier caste is poorly represented. A colony taken on 2nd February comprised a first-form queen, sixteen adult brachypterous males, fifty alate imagos, six soldiers, twelve first-form nymphs and about 200 larvae and second-form nymphs. The brachypterous males have 16-jointed antennae, dark brown antennae, head and abdomen, and apparently fully developed faceted eyes. It has been collected also at Barrington Tops, New South Wales (in rotten log, January), by Mr. H. J. Carter. Measurements of specimens from the last-mentioned locality, which differ from the type series, are as follows:—Imago: head, long 1.31, wide 1.14; pronotum, long 0.45; wide 0.85; eyes 0.272 × 0.289. Soldier: total length 11.00; head, with mandibles, long 4.27, without mandibles 2.85, wide 2.10; gula, at nar-

rowest part, wide 0.238; pronotum, long 0.68, wide 1.02; tibia iii, long 1.42. First-form nymphs variable: the smaller approximating the imagos in size, the larger as follows:—total length 8.25; head, long 1.65, wide 1.48; pronotum, long 0.57—0.68, wide 1.08—1.14. There is only one soldier in the series; it is considerably larger than those in the type series and is nearly as large as the Queensland species *S. queenslandicus* Mjög.; the latter, however, has two more joints in the antennae, shorter labrum, paler coloured and more slender mandibles and differently sculptured head.

The South Australian Museum collection contains a damaged soldier and several nymphs (carded) of an apparently undescribed species from Mt. Tambourine, S. Queensland (A. M. Lea).

The described species of *Stolotermes* are:—*S. ruficeps* Brauer (New Zealand), *S. brunneicornis* Hagen (Tasmania), *S. queenslandicus* Mjög. (N. Queensland), *S. australicus* Mjög. (N. Queensland), and *S. victoriensis* Hill (Victoria). I am indebted to Mr. W. J. Campbell and Professor Sjöstedt for specimens of the New Zealand and North Queensland species respectively. The soldier caste of the Tasmanian species is still undescribed; the imago is represented in the National Museum collection by specimens collected by Mr. A. M. Lea.

Genus *Calotermes*.

CALOTERMES (NEOTERMES) INSULARIS (White).

Walker, Cat. Neurop. Ins. Brit. Mus., (3), 1853 (*Termes*). White, Zool. "Erebus" and "Terror," Insects, 1874, (*Termes*). Hagen, Cat. Neurop. Ins. Brit. Mus., (1), Termitina, 1858 (*Calotermes*); Linn. Entom., xii., 1858. Froggatt, Proc. Linn. Soc. N.S.W., xxi., p. 524, 1896. Desneux, Gen. Insectorum, 1904. Holmgren, Kungl. sv. vet. Akad., xlv., 1911. Hill, Proc. Linn. Soc. N.S.W., xlv., p. 445, 1921.

The type (imago) is from New Zealand; it is recorded from New Holland by Hagen in 1858 and from Victoria by Froggatt in 1896. The soldier caste was described by me (1921, p. 445) from Victorian specimens associated with imagos which were afterwards compared with the type by Mr. B. Uvarov. The specimen (alate imago) referred to by Froggatt in 1896 is still in the National Museum, and is certainly conspecific with the above, as are other specimens in the same collection labelled "*Termes australis* Walker" (see notes on *C. longiceps* Frogg., p. 194, and *Coptotermes australis* Walker, p. 203.) This species does not appear to have been recognised in New Zealand since the type was collected by Dr. Sinclair, though it may be the species found as nymphs by Dr. R. J. Tillyard in Australian hardwood timber at Shannon, and the species referred to by Mr. P. F. Hill (*in litt.*) as occurring in indigenous timber in the Blenheim District.

CALOTERMES (NEOTERMES) LONGICEPS Froggatt.

Proc. Linn. Soc. N.S.W., xxi., p. 528, 1896.

This species is very closely related to, if not identical with, *C. insularis* (White). Froggatt described the soldier and nymph only (from New South Wales), White's species then being known only in the alate caste from New Zealand and Victoria. Froggatt's type (soldier) differs from typical Victorian examples of White's species only in its slightly smaller size and 20-jointed antennae, both variable characters (Lea's specimens from Stanwell, N.S.W., have 16-19 jointed antennae). The left mandible is described as having only three teeth, but a close examination of the type shows that the two small teeth behind the two large apical ones have been broken off or worn down. The right mandible has two large teeth, the basal one being concealed by the labrum. The gula is 0.456 at the narrowest part, which is within the range found in *C. insularis*, i.e., 0.342-0.456. The antennae in the last-named species have from 15-17 joints—I have seen none with 20 joints, as in Froggatt's type—and the third joint is slightly variable in size, but is never markedly longer and more clavate than the second and fourth. Mr. Froggatt's collection contains a series, including two soldiers, one alate imago and several nymphs, from Colo Vale, N.S.W., which I believe to be conspecific with *C. longiceps*. The imago is somewhat smaller than Victorian examples of *C. insularis*, but appears to be not otherwise different. The latter vary somewhat in total length and size of head and eyes, but the smallest examples I have seen are larger than the New South Wales specimen. In addition to the above Mr. Froggatt has two imagos from Sydney (16.2.06) from firewood which appear to be conspecific with the Colo Vale specimen, and with the following:—Two alate imagos in the National Museum from New South Wales, each of which bears a label in Walker's handwriting, "*Termes australis* var.?" and two similar specimens in the South Australian Museum from Dorrigo, N.S.W. Unfortunately, with the exception of two or three good nest-series from Victoria, no complete sets in good condition have been available for examination.

It is difficult to account for the identification by Walker of the two imagos in the National Museum as "*Termes australis* var.?" Walker described his species from specimens collected in Adelaide and Hagen in 1858 redescribed them, noting at the same time that Walker's soldier and worker belonged to another genus (*Calotermes*). Froggatt in 1897 also redescribed the imago from specimens collected in the type locality. From these descriptions it is clear that the imago described by Walker has little resemblance to *Calotermes*, and that it is perhaps correctly placed in the genus *Coptotermes* by Desneux in 1904, Holmgren in 1911, and more recent writers. (See page 203.)

CALOTERMES (NEOTERMES) ROBUSTUS Froggatt.

Proc. Linn. Soc. N.S.W., xxi., p. 529, 1896.

The following supplementary measurements are from the unique type (from Sydney), which Mr. Froggatt has kindly made available for examination on two occasions:—Head, long 2·16; wide 1·97; eyes, diameter 0·658×0·658, distance from lower margin of head 0·235; ocelli, diameter 0·235; pronotum, long 1·08, wide 1·97; tibia iii, long 1·64; antennae 18-jointed.

The soldier now associated with the type in Mr. Froggatt's collection is referred to under *C. deuqueti*, n. sp.

CALOTERMES (NEOTERMES) IRREGULARIS Froggatt.

Proc. Linn. Soc. N.S.W., xxi., p. 525, 1896. Holmgren, Kungl. sv. vet. Akad., xlv., 1911. Hill, Proc. Linn. Soc. N.S.W., xl., p. 111, 1915.

The following series of specimens have been compared and found to agree with the types:—Soldiers from Port Darwin, an alate imago from Bathurst Island (G. F. H.), soldiers and imagos from Groote Eylandt (N. B. Tindale, South Australian Museum Coll.), soldiers from Brisbane (H. Hacker, Queensland Museum Coll.), and soldiers from Gordonvale, Q. (F. H. Taylor). Port Darwin soldiers vary in the width of the gula (one-sixth to one-seventh as wide as head), and in the size of the head and eyes. The antennae are 14-jointed in the few perfect specimens in this series. Measurements of soldiers from Port Darwin: Total length 11·50; head and mandibles, long 4·56-6·00; head without mandibles, long 3·00-3·70; head, wide 2·28; pronotum, long 1·14-1·42, wide 1·99-2·22.

CALOTERMES (CALOTERMES) ?CONDONENSIS Hill.

Proc. Linn. Soc. N.S.W., xlvii., 1922.

Mr. J. Clark collected an alate imago of a species of *Calotermes*, s. str., with a colony of *Calotermes obscurus* (Walker) at Ludlow, South-West Australia, which may be the undescribed imago of the above species (from Condon, North-West Australia). It is almost indistinguishable from the imago of the Victorian (Kiata) insect recently described in These Proceedings (Hill, 1925, p. 207), as *Calotermes (C.) oldfieldi*. From the last-mentioned species the West Australian specimen differs only in having slightly larger eyes and eye facets, 18-jointed antennae; longer and wider antennal joints (especially from 10-18th), narrower and more arched pronotum and darker wing-veins.

Measurements.

	mm.
Length with wings - - - - -	15.50
Length without wings - - - - -	7.50
Head, to apex of labrum, long - - -	1.76
Head, to clypeofrontal suture, long - - -	1.43
Head, at and including eyes, wide - - -	1.43
Eyes, diameter - - - - -	0.408 × 0.425
Ocelli, diameter - - - - -	0.136 × 0.221
Pronotum, long 1.31; wide - - - - -	1.59
Tibia iii, long - - - - -	1.42

The similarity between these two forms suggests that if the specimen under notice proves to be conspecific with *C. condonensis*, the Victorian form may represent a race or variety of the West Australian insect; but the differences between the soldiers of *C. condonensis* and *C. oldfieldi*, as enumerated in the description of the latter species, appear to be specific, and should be so regarded until complete series are obtained from West Australia. The New South Wales insect described further on in these notes (p. 201) as a variety of *C. oldfieldi* is clearly closely allied to the above. It might be mentioned that Ludlow is approximately 950 miles southward from Condon, 1400 miles westward from Kiata, and over 2000 miles westward from Brooklana, which is about 700 miles North-West from Kiata.

CALOTERMES (GLYPTOTERMES) ?CLARIPENNIS Hill.

Proc. Roy. Soc. Vic., n.s., xxxvii. (2), p. 212, 1925.

Several imagos (carded) collected by Mr. A. M. Lea on Norfolk Island are closely allied to *C. affinis* Mjög, and to *C. claripennis* Hill. In view of their present condition and the absence of soldiers it seems advisable to regard them provisionally as a variety of the last-named species (from Lord Howe Island).

CALOTERMES (NEOTERMES) DEUQUETI, n. sp.

Soldier.

Colour.—Head orange-rufous; labrum somewhat paler than head; anteclypeus whitish, often much retracted.

Head (Text-fig. 1).—Long and narrow, parallel on the sides, with very few setae; frons concave, with a distinct median depression extending from the postclypeus to the transverse suture, and with a few obscure sinuous lines from its outer margin towards the middle; clypeus with anterior margin truncate, a row of four strong setae on the anterior part of the postclypeus; labrum large, spade-shaped, sometimes markedly retracted, strongly convex in the middle and towards the apex, the sides impressed; mandibles black, with the thickened basal part dark ferruginous like antennal carinae, similar to those of *C. insularis*, but more slender. Antennae 14- to 16-jointed; 3rd joint

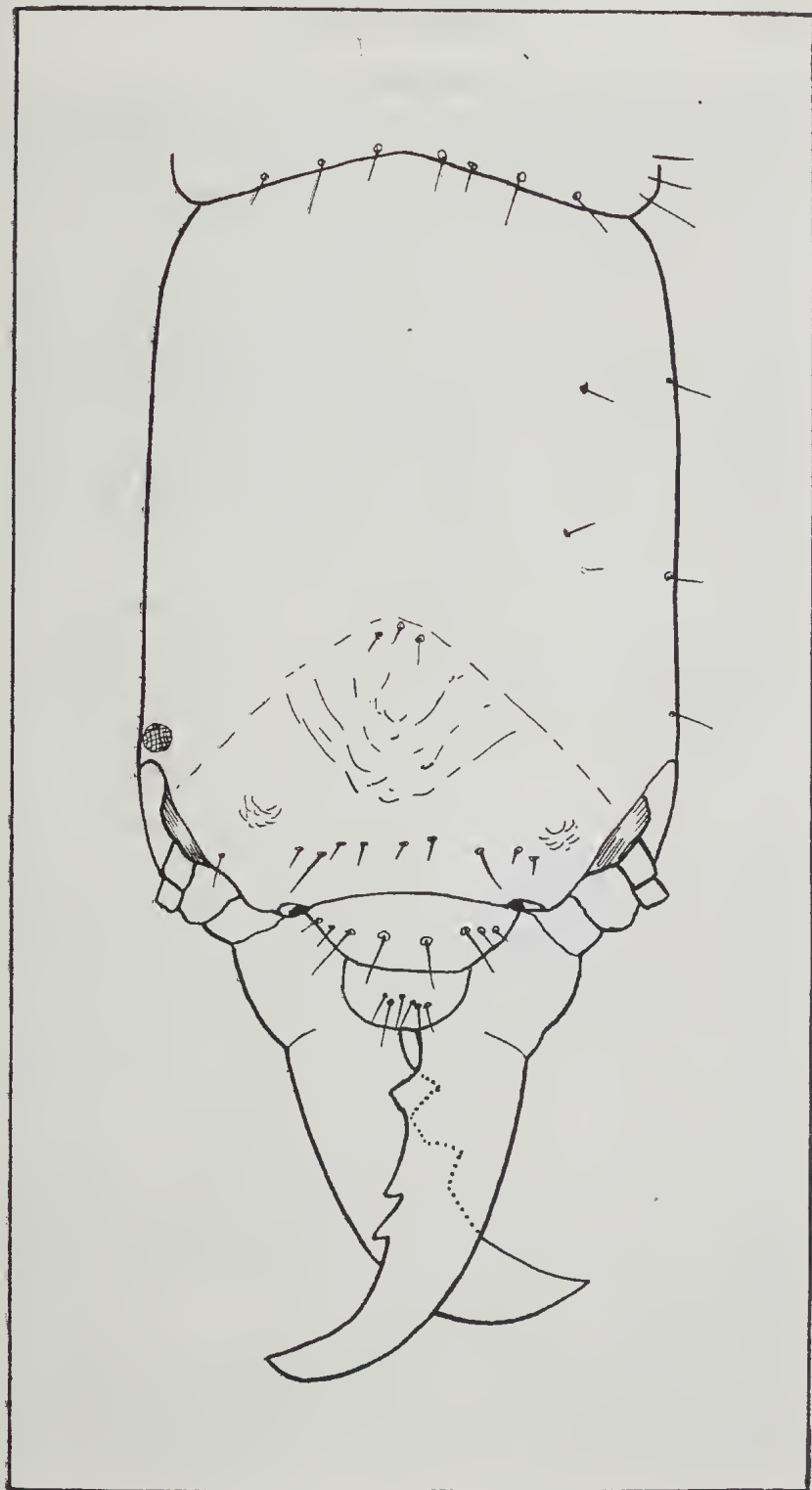


FIG. 1.—*Calotermes (Neotermes) deugueti*, n. sp. Head of soldier.

fully as long as 1st, but narrower, narrow at base, swollen towards apex, dark in colour, much longer than 2nd and 4th (which are equal in length), intermediate in form between that of *Calotermes*, s. str., and *Neotermes* (in one specimen one antenna has 3rd joint as in *Neotermes*). Gula long and narrow, 0.342 to 0.399 at its narrowest part, its posterior end only slightly widened (markedly widened in *C. insularis*).

Pronotum.—Short and very wide, as wide as, or a little wider than, head, not markedly arched for the genus, with scanty long and short setae, anterior margin concave, not notched in the middle, sides almost straight or broadly rounded, not narrowed posteriorly, with narrow impressed margin, posterior margin almost straight (slightly sinuate in one specimen).

Legs.—Short and moderately stout, with scanty long and short setae.

Abdomen.—With scanty long and short reddish setae along the apical margin of each sclerite.

Measurements.

	mm.
Total length - - - - -	11.50 — 12.00
Head, with mandibles, long - - - - -	5.13 — 5.58
Head, without mandibles, long - - - - -	3.30 — 3.70
Head, wide - - - - -	2.33 — 2.45
Head, deep - - - - -	1.76
Pronotum, long, 1.25; wide - - - - -	2.28 — 2.62
Tibia iii, long - - - - -	1.53

Locality.—New South Wales: Lismore (C. F. Deuquet, July 1922, per J. Clark).

Allied species.—From *C. insularis* (White) it is distinguished by its smaller size, relatively longer, narrower and shallower head, differently shaped pronotum, more slender mandibles, more distinctly grooved and differently sculptured frons, enlarged third antennal joint and ill-defined striae on ventral genae. From *C. irregularis* Froggatt it differs in the last mentioned characters and also in having a relatively longer and narrower head, narrower gula, longer and more slender mandibles, more concave and differently sculptured frons, shorter and wider pronotum, the latter more concave in front, straighter on the sides and posterior margin.

The possibility that the insect described above is the hitherto undescribed soldier of *C. robustus* Frogg. is suggested by the fact that Mr. Froggatt has placed in the tube with the type (imago) of his species a soldier of a very closely allied, if not the same, species, thus clearly indicating his opinion as to its identity, though he did not refer to it in his later paper in 1915. The type was described from a single specimen captured at a light indoors, so that, in the absence of data, there is some reason for questioning the identification of the soldier now associated with it. The specimens described above do not agree entirely with the latter, and as there is no reason, other than that given above, for con-

necting them with any described species, I have deemed it expedient to describe them here in preference to adopting one of the alternatives.

Type soldier in the National Museum of Victoria.

CALOTERMES (?GLYPTOTERMES) PERANGUSTUS, n. sp.

Imago (de-alated).

Colour.—Upper surface auburn, wing-stumps darker; sternites and tibiae buckthorn-brown, femora paler; labrum yellow.

Head.—Finely shagreened, with a few short setae, a little longer than wide, sides slightly narrowed posteriorly, the summit slightly concave and with a few obscure rugae in the middle in line with the middle of the eyes. Clypeus very short, with pale-coloured and slightly sinuate anterior margin. Labrum very short and narrow, not reaching apex of mandibles, a little longer than wide, about one-third as wide as head, nearly straight on sides and almost truncate in front. Eyes rather small (0.289×0.306 — 0.306×0.340), 0.119 — 0.170 from lower margin of head, and not very prominent. Ocelli broadly oval (0.085×0.119), very close to eyes. Antennae incomplete; 1st joint short and stout; 2nd about half as long and two-thirds as wide as 1st, nearly quadrate; 3rd a little longer and wider than 2nd, narrower at base; 4th and 5th about as long as 2nd, moniliform; 5th-7th increasing in length progressively.

Thorax.—Pronotum narrower than head, markedly concave in front, anterolateral angles scarcely rounded, sides sloping slightly to the nearly truncate posterior margin, on either side an impressed area behind the anterior margin, anterior and lateral margins impressed and bearing a scanty fringe of short and moderately long hairs, these almost wanting on remainder of surface. Posterior margin of meso- and metanotum concave. Wing stumps almost hairless, showing base of veins very distinctly, those of forewings large, extending midway between posterior margin of pronotum and apex of metanotum, those of hindwings very small, extending very little beyond the apex of those of the forewings.

Legs.—Moderately long and stout, with very few short setae; femora stout, hind femora about half as wide as long; claws long and slender; tibial spurs markedly so, the latter serrate.

Abdomen.—Long and narrow, the segments fringed with scanty short setae apically, sixth and seventh sternites of female very large and equal in length.

	Measurements.	mm.
Total length	- - - - -	5.30 — 5.60
Head, to apex of labrum, long	- - - - -	1.08 — 1.14
Head, to clypeofrontal suture, long	- - - - -	0.94
Head, wide	- - - - -	0.97
Pronotum, long 0.57; wide	- - - - -	0.91
Tibia iii, long	- - - - -	2.70 — 3.00

Soldier.

Colour.—Head ochraceous-tawny behind shading to russet anteriorly; mandibles black with dark castaneous base; pronotum same as back of head, remainder of thorax and tergites of abdomen buckthorn-brown; legs and under surface chamois.

Head.—Finely shagreened and almost devoid of setae, long and narrow, parallel on the sides, broadly rounded behind, frons broadly concave, slightly rugose and sloping gradually to the clypeus. Clypeus short and very wide, a row of eight setae near anterior margin, the two middle ones well separated from each other and from a group of three near each lateral margin, the anterior margin straight and without pale border. Labrum short and wide, with narrowly impressed margin, sides and anterior margin rounded and together almost forming a semicircle, a group of about twelve moderately long setae near the apex and two pairs of short ones behind the middle. Eyes small, sometimes faintly pigmented, well separated from the posterior margin of the antennal foveolae. Mandibles short and broad, strongly incurved at tips, the right with a triangular tooth about the middle and a larger but similarly shaped one nearer the base, the left with a pair of triangular teeth before the middle and a slightly larger one nearer the base. Antennae 11- to 13-jointed; variable in number of joints and segmentation in same individual; 1st joint short and stout; 2nd much shorter and narrower, about equal to 4th but sometimes shorter than 3rd; 3rd generally shortest of all and narrower than 2nd and 4th, but sometimes longer and wider; 5th always larger than 4th; 5th to apical joint decreasing in length progressively; apical joint very short and narrow. Gula very long and narrow.

Thorax.—Pronotum small, about as wide as head, short, with narrow impressed margin, margin with scanty fringe of small setae, anterior margin deeply and widely concave, a deep oblique impression on each side midway between the middle and the lateral margin, antrolateral corners narrowed, sides sloping rather sharply to the slightly sinuate posterior margin. Posterior margin of meso- and metanotum as in pronotum and generally showing posterolateral prolongations or wing rudiments.

Legs.—Very short and stout, with very few setae, femora of hind legs more than half as wide as long. Claws and tibial spurs large, the latter serrate.

Abdomen.—Glabrous, long and narrow, widest at base and tapered to the bluntly pointed apex, tergites with scanty fringe of pale short setae.

Measurements.

Total length	-	-	-	-	6.50 — 6.75
Head, with mandibles, long	-	-	-	-	2.45 — 2.80
Head, without mandibles, long	-	-	-	-	1.82 — 2.10
Head, deep	-	-	-	-	1.08 — 1.14
Head, wide	-	-	-	-	1.14 — 1.19
Gula, at narrowest part, wide	-	-	-	-	0.57 — 0.74 rarely
Pronotum, long	0.65 — 0.68;	wide	-	-	1.02 — 1.14
Tibia iii, long	-	-	-	-	0.62

Nymphs of first form.

Antennae 13-jointed; wing rudiments bright ferruginous; eyes faintly pigmented; total length 6.00.

Locality.—New South Wales; Wauchope (20/9/25).

Mr. W. W. Froggatt, who collected the specimens described above, states that the colony was found in parallel galleries in the stem of a living tree.

Allied species.—The soldier differs from *C. iridipennis* Frogg. in its smaller size, lighter colour, wider and more rounded labrum, different arrangement of setae on clypeus, and wider concavity on frons. The imago of Froggatt's species is a much larger and darker insect. From the imago of *C. tuberculatus* Frogg. it differs in its smaller head and larger eyes (measurements of *C. tuberculatus*: Head to apex of labrum 1.31, to clypeofrontal suture 1.02, wide 1.14; eyes 0.255×0.289). The soldiers of the last-mentioned species are very distinct. From the imago of *C. eucalypti* Frogg. it differs in having larger head, eyes and pronotum (measurements of *C. eucalypti*: Head to apex of labrum 1.02, to clypeofrontal suture 0.80, wide 0.85; eyes 0.238×0.255 ; pronotum long 0.55, wide 0.85). From *C. brevicornis* Frogg. the imago differs in having only 3 apical spurs on tibiae, much smaller eyes and much darker head. The soldiers differ markedly in having no median anterodorsal prominence on head and different labrum. From the imago of *C. nigrolabrum* Hill it differs in having larger eyes and more quadrate (proportionately longer) pronotum. The soldier of the last-mentioned species is a much more robust insect with distinctly different frons. Compared with the soldier of *C. rufinotum* Hill the proposed new species has a much smaller head and pronotum, the latter sclerite being less quadrate. *C. trilineatus* Mjög. is a much larger species in both castes.

Type imago and soldier in the National Museum of Victoria.

CALOTERMES (CALOTERMES) OLDFIELDI Hill, var. CHRYSEUS,
n. var.

Imago.

Differs from the typical form (from Kiata, Victoria) described in These Proceedings (n.s., xxxvii. (2), p. 207, 1925), in being smaller and of lighter colour (the latter possibly due to immaturity). The head, eyes, ocelli and pronotum are distinctly smaller and the antennae are composed of only 16 joints (not 19-20, as in typical form). Wings typical of the sub-genus; forewing with five or six branches from the radial sector, the last one or two generally short and weakly chitinised; cubitus with about twelve branches, all feebly chitinised. Hindwing with radial sector as in forewing; media branching from radial sector a little beyond the suture; cubitus with about fourteen branches, all feebly chitinised. Nymphs with creamy white wing rudiments.

Measurements.

	mm.
Length, with wings - - - - -	13.00 — 14.00
Length, without wings - - - - -	6.50 — 7.50
Head, to apex of labrum, long - - - - -	1.48 — 1.70
Head, to clypeofrontal suture, long - - - - -	1.08 — 1.31
Head, wide - - - - -	1.19
Eyes, diam. - - - - -	0.357 × 0.374
Pronotum, long 1.02; wide - - - - -	1.31 — 1.42
Forewings, long. 11.00 — 11.50; wide - - - - -	2.90
Tibia iii, long - - - - -	1.00

Soldier.

Differs from the typical form in its smaller size, smaller and less setaceous head and smaller pronotum, the latter distinctly less deeply and more obtusely notched anteriorly. The antennae in the only two perfect specimens are 13-jointed. The mandibles are generally similar to those of the typical form, but in one specimen there is only one apical tooth on the left and in another a normal apical tooth with a very small tooth at its base.

Measurements.

	mm.
Total length - - - - -	7.50 — 8.00
Head, with mandibles, long - - - - -	3.30 — 3.80
Head, to labial suture, long - - - - -	2.16 — 2.45
Head, wide - - - - -	1.42 — 1.48
Pronotum, long. 1.02 — 1.14; wide - - - - -	1.42 — 1.60
Tibia iii, long - - - - -	0.85 — 0.91

Localities.—New South Wales: Brooklana (W. W. Froggatt), ?Lismore (C. Deuquet, per J. Clark).

The Brooklana specimens (type colony), which were captured on 21/10/25 in a fallen dead tree, comprise young larvae and nymphs in all stages of development, several alate and de-alated males and females and several soldiers. The second colony includes a first-form king and queen, a few soldiers and several nymphs. The imagos are smaller than the Brooklana specimens, with which they agree in other respects; the soldiers have heads of uniformly smaller size (somewhat smaller than the smallest in the type colony) and 10-jointed antennae.

Allied species.—From *C. condonensis* Hill the soldier differs in having a very much smaller and paler coloured head, very slightly widened in the middle (widest part) and not narrowed posteriorly, with noticeably fewer setae, frons glabrous and with wider concavity, mandibles variable but generally similar in dentition, antennae 13-jointed, 3rd joint variable but always long and strongly clavate, the 4th and following joints distinctly more globular. The gula and pronotum are similar in form in the two species, but proportionately smaller in the New South Wales insect.

Type imago and soldier in the National Museum of Victoria.

Genus *Coptotermes*.

?COPTOTERMES AUSTRALIS (Walker).

Cat. Neurop. Ins. Brit. Mus., iii., p. 525, 1853 (*Termes*).
 Hagen, op. cit., i., p. 23, 1858; Linn. Entom., xii., p.
 173, 1858 (*Termes*). French, Destructive Ins. Vic-
 toria, ii., p. 137, 1893 (*Termes*). Froggatt, Proc.
 Linn. Soc. N.S.W., xxii., p. 738, 1897 (*Termes*).
 Desneux, Gen. Insectorum, p. 34, 1904 (subgen. *Cop-
 totermes*). Holmgren, Kungl. sv. vet. Akad. Handl.,
 xlvi., p. 73, 1911 (*Coptotermes*). Mjöberg, Arkiv.
 för Zool., xii., 1920.

The soldier and worker castes of this species are unknown and our knowledge of the imago has not been advanced since 1897, when Froggatt redescribed it from specimens collected by Tepper in Adelaide (type locality). In view of the disagreement between the original description of this species and Hagen's re-description and figure of the type the following abstract from a letter received recently by Mr. J. A. Kershaw from Dr. G. A. K. Marshall is of special interest:—

"The unique type is in very bad condition, but it is undoubt-
 edly distinct from the two species sent" [*Coptotermes acinaci-
 formis* (Frogg.) and *C. flavus* (Hill)]. "In *Termes australis*
 Walk. the general type of venation is like that of *C. flavus*, but
 "the forewing is much larger and proportionately broader
 "(12.6×4.2 mm. as against 9.0×2.4 mm.). In the forewing the
 "median separates from the radius at the basal suture (not in
 "the wing-stump as in *flavus*), and lies very close to the cubitus;
 "it reaches the margin and forks at about the same place as in
 "*flavus*, but both the branches are simple, in its upper edge
 "there are five or six very faint short branches in the basal half;
 "the microtrichia are distinctly less numerous than in *flavus*,
 "and the micrasters are 4-rayed, or perhaps it would be more
 "correct to say that they are four-sided cones. The pronotum
 "is distinctly narrower than the head with the eyes, and its shape
 "is indicated in the accompanying sketch drawn by means of a
 "camera lucida."

The sketch shows a pronotum quite unlike that of any known Australian *Coptotermes*, but distinctly *Eutermes*-like in outline. If *Termes australis* Walker is a *Coptotermes* at all, it is clearly quite distinct from any member of the genus as yet recorded from this Region.

French in 1893, in recording *Termes australis* "Hagen" as destructive to vines and fruit trees in Victoria confuses two quite distinct species in the plate accompanying his notes. His figures 5 and 6 appear to represent the alate imago of *C. acinaciformis*, *C. flavus* or a closely allied species, and his figure 10 the soldier of *Calotermes insularis* (White).

COPTOTERMES LACTEUS (Froggatt).

Agric. Gaz. N.S.W., p. 297, 1897; Proc. Linn. Soc. N.S.W., xxii., p. 721, 1897; Dept. Agric. N.S.W., Farmers' Bull., No. 60, 1915. Silvestri, Die Fauna Südwest Australiens, ii. (17), p. 293, 1909. Mjöberg, Arkiv. för Zool., xii. (15), p. 29, 1920. Hill, Proc. Linn. Soc. N.S.W., xlviii., p. 159, 1923.

The National Museum possesses a fine series of co-types (from Shoalhaven, N.S.W.), with which have been compared soldiers and workers collected at Lion Mill, W. A., by Michaelsen and Hartmeyer, and identified by Silvestri as above, soldiers and workers from Alice River, N.Q., collected and similarly identified by Mjöberg, a complete series from Gosford, N.S.W. (A. Musgrave, 2/10/25) and soldiers and workers from Nepean River, N. S. W. (Musgrave). The two last-mentioned series are undoubtedly correctly referred to *C. lacteus*, but the others are, in my opinion, *C. acinaciformis*, to which species I refer also about 90 of the 180 colonies of *Coptotermes* examined during the preparation of these notes.

In referring to the type imago in an earlier paper (Hill, 1923, p. 43) I stated that the colour of the head is hazel and that of the wings russet. In the better preserved co-types referred to above and in Musgrave's recently captured specimens the colour is much darker and agrees with the original description.

The following measurements are those of co-types from Shoalhaven, N.S.W.:—

Imago.		mm.
Length with wings - - - - -		15·00 — 15·50
Length without wings - - - - -		6·50 — 7·00
Head, to clypeofrontal suture, long - - - - -		1·02 — 1·08
Head, to apex of labrum, long - - - - -		1·25 — 1·36
Head, wide - - - - -		1·25
Eyes, diam. - - - - -	$0·306 \times 0·306$ — $0·323 \times 0·323$	
Pronotum, long 0·74; wide - - - - -		1·08 — 1·14
Forewing, long, 11·25 — 11·75; wide - - - - -		3·13 — 3·24
Tibia iii, long - - - - -		1·08 — 1·14

Soldier.		
Total length - - - - -		3·50 — 3·90
Head, with mandibles, long - - - - -		1·93 — 2·10
Head, to apex of labrum, long - - - - -		1·42 — 1·48
Head, to anterior margin of fontanelle, long - - - - -		1·14 — 1·31
Head, wide - - - - -		1·08 — 1·14
Antennae, 15- or 16-jointed - - - - -		
Gula, width at narrowest part - - - - -		0·272 — 0·289
Pronotum long, 0·40 — 0·45; wide - - - - -		0·80 — 0·85
Tibia iii, long - - - - -		0·97

The measurements of soldiers given in my earlier paper are those of *Uralla* specimens in the South Australian Museum which I now consider to be referable to *C. acinaciformis*.

COPTOTERMES ACINACIFORMIS (Froggatt).

Proc. Linn. Soc. N. S. W., xii., p. 740, 1897; Dept. Agric.
N. S. W., Farmers' Bulletin, No. 60, 1915. Hill, op.
cit., xl., p. 92, 1915, and xlvii., p. 159, 1922.

To this species I refer specimens from over 90 colonies, some of which differ from the typical form and doubtless represent local races of our most widely distributed species. As a rule there is very little difference in individuals from the same colony but both soldiers and workers from different colonies often vary in size and in the number of joints composing the antennae.

The following tabulations summarise measurements of a series of specimens from 12 colonies (in which all the castes are represented) from various parts of the continent:—

Measurements of imagos.

	mm.
Length with wings - - - - -	11.50 — 13.00
Length without wings - - - - -	6.00 — 7.00
Head, to apex of labrum, long - - - - -	1.36 — 1.48
Head, to clypeofrontal suture, long - - - - -	0.91 — 1.02
Head, wide - - - - -	1.19 — 1.31
Eyes, diam., 0.340×0.340 — 0.408×0.408; generally 0.340×0.340.	
Ocelli 0.102×0.136 — 0.119×0.187	
Pronotum, long 0.68 — 0.85; generally 0.74	
Pronotum, wide 1.14 — 1.22; generally 1.14	
Forewings, long 8.75 — 9.50; generally 9.25	
Forewings, wide 2.73 — 3.00; generally 2.85	
Tibia iii, long 0.97 — 1.25	
Antennae, number of joints, 18 — 21; generally 19.	

The antennae in the type series are said to be 17-jointed; this number appears to be exceptional and has not been found in any of the colonies examined during the preparation of these notes. In two colonies a few individuals have 18-jointed antennae and in one the number varies from 19 to 21; in all other colonies the number is 19. The maximum number of joints is found in a colony from Banks Is., and is correlated with eyes of the maximum diameter.

Measurements of soldiers.

Total length - - - - -	5.00 — 5.30
Head, with mandibles long - - - - -	2.28 — 2.73; generally about 2.50
Head to apex of labrum, long - - - - -	1.76 — 2.16; generally about 1.88
Head, to frontal opening, long - - - - -	1.31 — 1.53; generally about 1.42
Head, wide - - - - -	1.14 — 1.88; rarely more than 1.19
Gula, at narrowest part, wide - - - - -	0.204 — 0.272; generally about 0.255
Frontal opening, internal diam. - - - - -	0.102 — 0.136; generally about 0.119
Pronotum, long - - - - -	0.45 — 0.53; generally about 0.50
Pronotum, wide - - - - -	0.80 — 0.96; generally about 0.91
Tibia iii, long - - - - -	0.91 — 1.10; generally about 1.02
Antennae, number of joints - - - - -	15 — 17; generally 16

In the type series the antennae are 17-jointed, which number occurs in a few individuals only in a large colony (from Townsville) in which the majority are 16-jointed. In only one colony (from Mildura) are all the antennae 15-jointed.

Colonising flight.—The alate imagos are to be found over a longer period than appears to be the case in the three other species recorded from South-Eastern Australia, i.e., *C. lacteus*, *C. sedulus* and *C. flavus*, which have been found respectively from 28th August to 9th October, during October, and from 29th October to 19th November. The earliest record for *C. acinaciformis* appears to be 18th December (Hacker, Brisbane), and the latest 29th May (Hill, Northern Territory). No field notes are available at present regarding the Western Australian species *C. michaelsoni* and *C. raffrayi*.

Localities.—The type locality is Hall's Creek, Kimberley Division of Western Australia; it has been recorded also by Froggatt in 1915 from Kalgoorlie (Central Division of Western Australia) and by me in 1922 from several Northern Territory and North Queensland localities. To these localities should now be added the following:—Northern Territory: Bathurst Island, all castes, G. F. H. 2/11/16; Torres Strait: Banks (Moa) Island (all castes), Rev. G. A. Luscombe 8/1/21, ?Thursday Island, soldiers and workers; Nth. Queensland: Meringa, all castes, F. H. Taylor 31/12/24 (in National Museum), Magnetic Island, all castes, N. Paskin, Jan., 1923, Torrens Creek, all castes, G. F. Cook 4/2/22, Malanda, soldiers and workers, G. F. H.; South Queensland: imagos, H. Hacker 18/12/11 (in Queensland Museum); New South Wales: Sydney, all castes, A. R. McCulloch 22/12/20 (in Australian Museum, No. 48,288); Victoria: Mildura, all castes, C. French 11/1/25 (in National Museum), ?Mooroopna, soldiers and workers, F. E. Wilson (in National Museum), ?Violet Town, soldiers and workers, C. Oke (in National Museum), Linga, soldiers and workers, F. E. Wilson, ?Bamawm, soldiers and workers, W. F. Hill; Western Australia: Kalgoorlie, imagos, H. Morrison per J. Clark (previously recorded by Froggatt from this locality, but caste not stated), ?Lion Mill, soldiers and workers, J. Clark, ?Tammin, soldiers and workers, J. Clark.

COPTOTERMES RAFFRAYI Wasmann.

Proc. Linn. Soc. N. S. W., xxv., p. 244, 1900). Hill, op. cit., xlv., p. 264, 1921, and xlviii., p. 160, 1922.

Mr. J. Clark has collected this species in the following hitherto unrecorded Western Australian localities:—Mundaring, Albany, Hovea, Capel, Denmark and Ludlow.

COPTOTERMES MICHAELSONI Silvestri.

Die Fauna Südwest Australiens, ii. (17), p. 293, 1909.

Further Western Australian records are:—Merredin (L. J. Newman), Tammin (J. Clark) and Hovea (J. Clark).

COPTOTERMES SEDULUS Hill.

Proc. Linn. Soc. N. S. W., xlviii., p. 40, 1923.

The National Museum Collection contains specimens from the following additional Victorian localities:—Berwick, soldiers and

workers, from trunk of orchard tree, G. F. H. 13/1/24; Harrietteville and Wandiligong, soldiers and workers, C. Barrett; Marysville, soldiers and workers, under log, J. A. Kershaw, Wilson's Promontory, all castes, J. A. K. 9/10/24; Waratah, soldiers and workers, in log, B. F. Hill; Cockatoo, all castes, G. F. H. 19/9/24. In the same collection there is a series, including alate imagos, collected by the late F. P. Spry at Ferntree Gully on 28/8/20, from "a clayey nest four feet from the ground on the trunk of living Eucalypt tree"; few species mature so early in the Spring.

Colonising flight.—The colonising flight observed at Cockatoo in September, 1924, commenced over a considerable area of heavily timbered, hilly country early in the afternoon of 18th and continued until dusk, during which period one flight was traced to its source in the trunk of a very large fallen tree, the interior of which was almost completely destroyed and filled with earthy material. The same colony "swarmed" again on the following afternoon, as did others in the same locality, and for two or three hours countless thousands of insects were on the wing. From one large standing tree, the lower trunk of which showed extensive damage and the characteristic filling of clayey matter, these insects issued for more than an hour in an uninterrupted stream from numerous circular or slit-like openings in the nest-wall.

In the description of the soldier the antennae are said to be 16-jointed and the diameter of the frontal opening 0.175; in the abundant material now before me there are many examples with 15-jointed antennae and frontal opening with an internal diameter of only 0.119. This species is closely allied to *C. lacteus*, especially in the soldier caste, but it is undoubtedly specifically distinct.

COPTOTERMES FLAVUS, n. sp.

Imago.

Colour.—Head, thorax and wing-stumps cinnamon-brown, lower lateral and posterior margin of head somewhat paler; tergites generally Mars-yellow shading to Sudan-brown, the first to fourth sometimes cinnamon-brown; antennae, labrum, post-clypeus, palpi, legs and undersurface dull yellow-ochre; tibiae and apical half of sternites dark yellow-ochre; anteclypeus whitish; wings light fuscous, veins much darker than membrane. The entire insect densely setaceous.

Head.—Longer than wide, posterior margin hemispherical, anterior margin narrowed sharply to the base of the clypeus; eyes moderately prominent and small (0.272×0.289 to 0.285×0.306), 0.119 from lower margin of head; ocelli moderately large (generally 0.085×0.136 , rarely 0.085×0.153), contiguous with, or about half their width from, eyes; a light coloured area larger than the ocelli on each side of the head between the anterior margin of the ocelli and the posterior margin of the clypeus; clypeus short and wide, four and one half times wider than long,

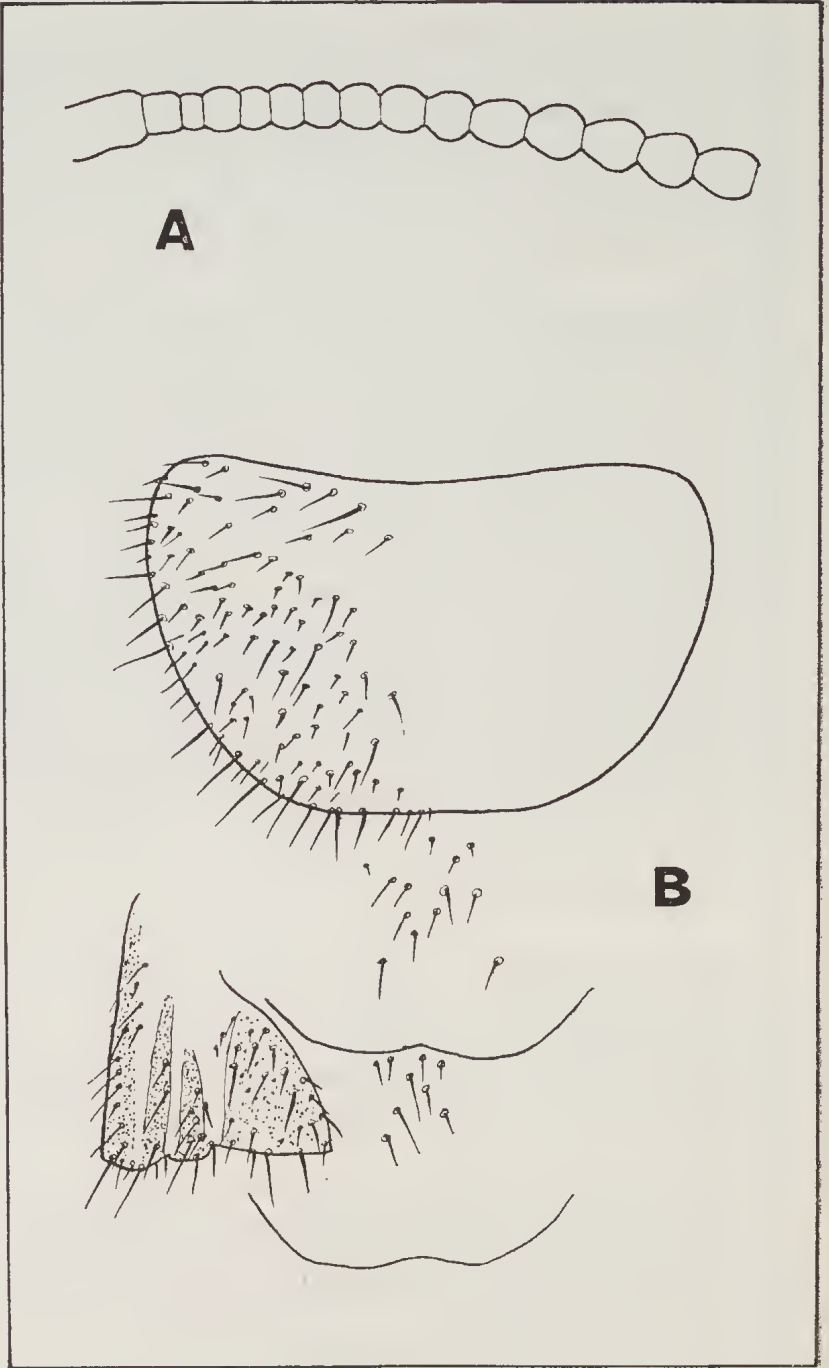


FIG. 2.—*Coptotermes flavus*, n. sp. A, imago, antenna; B, imago, thorax.

slightly rounded behind, only slightly convex above, with indistinct median suture and a few moderately long and many short setae; anteclypeus with anterior margin slightly rounded. Labrum small, widest about the middle, narrowed anteriorly to the truncate apex. Fontanelle indistinct. Antennae (Text-fig. 2a) 19-jointed; 2nd joint half as long as 1st, cylindrical; 3rd less than half as long as 2nd, shortest of all; 4th twice as long and noticeably wider than 3rd; 5th and 6th smaller than 4th.

Thorax (Text-fig. 2b).—Pronotum large, a little narrower than head, anterior margin widely emarginate in the middle, antero-lateral angles rounded, sides rounded and a little narrowed to the slightly sinuate posterior margin. Posterior margin of meso- and metanotum a little more sinuate than that of pronotum.

Wings.—Long and narrow, the two anteriormost veins very distinct and markedly setaceous along their entire length; media and first five or six branches of cubitus distinct only at their proximal end; cubitus with nine or ten branches. Membrane densely setaceous and very densely covered with micrasters. Stumps of forewings large, extending beyond the apex of the mesonotum, very setaceous, shaded with dark brown, base of veins very distinct; stumps of hindwings small, extending half way between the apex of the mesothoracic stumps and the apex of the metanotum.

Legs.—Moderately long and slender, very setaceous, the tibiae slightly darker than the femora and tarsi.

Abdomen.—Long and narrow, very little widened in the middle, the tergites densely clothed with long and short golden setae, the spiracles on first seven visible segments very distinct as brown, oblique spots.

Measurements.

		mm.
Length with wings	- - - - -	11.25 — 12.25
Length without wings	- - - - -	4.50 — 5.50
Head, to apex of labrum, long	- - - - -	1.25 — 1.30
Head, to clypeofrontal suture, long	- - - - -	0.91
Head, wide	- - - - -	1.00
Antennae, long	- - - - -	1.71
Pronotum, long	0.63 — 0.68; wide	0.91 — 1.08
Forewings, long	9.00 — 9.50; wide	2.40 — 2.90
Tibia iii, long	- - - - -	0.96

Soldier.

Colour.—Head yellow-ochre, legs and antennae chamois.

Head (Text-fig. 3a,b).—Moderately setaceous, rounded behind and on the sides, widest about the posterior one-third, then narrowed gradually to the base of the mandibles where it is a little more than one-half as wide as at widest part. Labrum acuminate, the apex hyaline and bearing two long setae. Antennae 15- (rarely 16-) jointed; 3rd joint about as long as 4th but narrower; 5th-7th progressively longer, or, when 16-jointed, the 3rd very short and narrow, 4th a little longer.

Thorax.—Pronotum (Text-fig. 3c) moderately setaceous, the anterior one-fourth raised, the anterior margin arcuate and strongly emarginate in the middle, anterolateral corners narrow, sides sloping sharply to the slightly sinuate posterior margin.

Legs.—Moderately short and stout, clothed with long reddish setae, scanty of femora, rather numerous on tibiae; claws long and slender.

Abdomen.—Markedly setaceous, short and moderately wide, widest in the middle, narrowed from the 5th tergite to the bluntly pointed apex. Cerci and styli long and markedly setaceous.

	Measurements.	mm.
Total length - - - - -	- - - - -	4.45 — 4.50
Head, with mandibles, long - - - - -	- - - - -	1.82 — 1.99
Head, to frontal opening, long - - - - -	- - - - -	1.14 — 1.20
Head, to apex of labrum, long - - - - -	- - - - -	1.48 — 1.65
Head, wide - - - - -	- - - - -	1.02 — 1.08
Thorax and abdomen, long - - - - -	- - - - -	2.28 — 2.55
Gula, at narrowest part, wide - - - - -	- - - - -	0.255 — 0.272
Frontal opening, internal diam. - - - - -	- - - - -	0.102 — 0.119
Pronotum, long, 0.42 — 0.45; wide - - - - -	- - - - -	0.68 — 0.78
Tibia iii, long - - - - -	- - - - -	0.91

Worker.

Colour.—Head antimony-yellow with a ferruginous spot at the articulation of the mandibles; antennae and legs cream.

Head.—A little longer than wide, broadly rounded behind, straight on the sides to near the base of the mandibles, with scanty pale setae. Postclypeus about two-thirds wider than long, arcuate behind, truncate in front, with a row of about six setae anterior margin, median suture indistinct. Labrum very small, rounded, markedly convex. Antennae 15- (rarely 16-) jointed.

Thorax.—Pronotum shorter and less setaceous than that of soldier, otherwise similar.

Legs.—More slender and less setaceous than those of soldier.

Abdomen.—With scanty pale setae.

	Measurements.	mm.
Total length - - - - -	- - - - -	4.00 — 4.50
Head, to apex of labrum, long - - - - -	- - - - -	1.42 — 1.48
Head, to clypeofrontal suture, long - - - - -	- - - - -	0.91
Head, wide - - - - -	- - - - -	1.14 — 1.19
Pronotum, long 0.40; wide - - - - -	- - - - -	0.74

Localities.—Victoria: Melbourne (type loc.), Beaconsfield, Marysville, Traralgon.

The description of the imago is based on specimens collected on the wing at about 5 p.m. on 29/10/23 in my garden, where additional specimens were taken four days later, and, also, on 19/11/24 and 26/10/25. The parent colony has not been located, but it is probably situated in one of the numerous Eucalypt stumps or roots to be found in the near vicinity. The soldier and worker morpho-

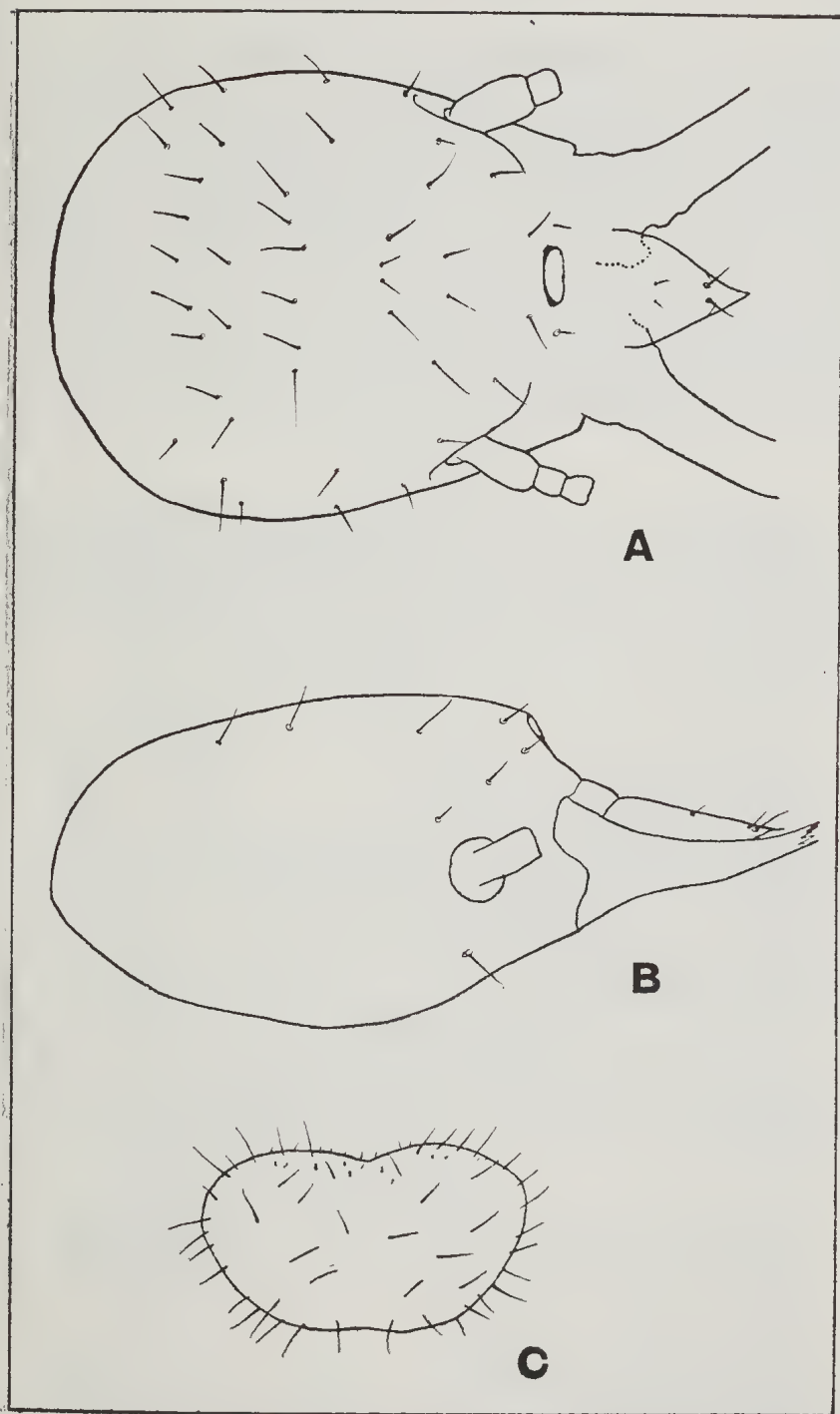


FIG. 3.—*Coptotermes flavus*, n. sp. A, soldier, head from above; B, soldier, head in profile; C, soldier, pronotum.

types are from Marysville, where several colonies, including one in which all the castes are represented, were taken by Mr. J. A. Kershaw in November. Imagos were taken at Beaconsfield by Miss J. C. A. Traill and myself in November, and near Traralgon by Miss J. Galbraith about the middle of the same month.

Allied species.—The imago is most closely allied to *C. acinaciformis*, from which species it is distinguished by the head, eyes and ocelli being smaller, pronotum smaller, more deeply notched anteriorly, wings distinctly darker in colour, with fewer and smaller microtrichia, wing-membrane densely covered with micrasters (wanting in *C. acinaciformis* and *C. raffrayi*). The legs are similar in colour, but the under surface of abdomen is somewhat brighter in the proposed new species.

C. FLAVUS, var.

The National Museum has received from Mr. W. W. Froggatt a complete nest-series collected at Pilliga Scrub, New South Wales, 30/10/24, which appears to be best regarded as a variety of the above. From the typical form the imago differs in having wider head, longer body, larger eyes, larger ocelli, shorter wings, smaller and fewer micrasters on wing-membrane.

	Measurements.	mm.
Length with wings - - - - -	- - - - -	11.25 — 12.25
Length without wings - - - - -	- - - - -	6.50 — 7.00
Head, to apex of labrum, long - - -	- - - - -	1.25 — 1.36
Head, to clypeofrontal suture, long - -	- - - - -	0.85 — 0.91
Head wide - - - - -	- - - - -	1.19
Eyes, diameter 0.340×0.340 — 0.357×0.357	- - - - -	- - - - -
Eyes, from lower margin of head - - -	- - - - -	0.85 — 0.108
Ocelli 0.102×0.153 — 0.119×0.170	- - - - -	- - - - -
Pronotum, long 0.68; wide - - - - -	- - - - -	1.02
Forewings, long 9.00; wide - - - - -	- - - - -	2.90
Tibia iii, long - - - - -	- - - - -	1.00

The soldiers differ very little from the typical form. The head is generally slightly smaller, the antennae are 14- (rarely 15-) jointed, and are generally, though not always, differently segmented, the last three joints decreasing in size progressively and the last two much narrower.

	Measurements.	mm.
Total length - - - - -	- - - - -	4.00 — 4.35
Head, with mandibles, long - - - - -	- - - - -	1.82 — 1.93
Head, to apex of labrum, long - - - -	- - - - -	1.53
Head, to frontal opening, long - - - -	- - - - -	0.14
Head, wide - - - - -	- - - - -	0.97
Gula, at narrowest part, wide - - - -	- - - - -	0.255 — 0.272
Pronotum, long 0.45; wide - - - - -	- - - - -	0.70 — 0.74
Tibia iii, long - - - - -	- - - - -	0.80

The worker appears to differ only in having 14- (rarely 15-) jointed antennae.

COPTOTERMES LABIOSUS, n. sp.

Imago.

Colour.—Amber-brown above, vertex of head suffused with darker brown; under surface and legs buckthorn-brown, tibiae and apical segments of abdomen somewhat darker than remainder of under surface; wings almost hyaline, tinged with pale yellow, veins light brown at base only, otherwise very little darker than membrane.

Very similar to *C. flavus*, n. sp., from which it differs as follows:—Head and thorax lighter in colour and markedly less setaceous, pronotum smaller and more rounded on the sides, wings distinctly lighter in colour and with distinctly fewer and smaller micrasters and microtrichia.

	Measurements.	mm.
Length with wings	- - - - -	11.50
Length without wings	- - - - -	5.25
Head, to apex of labrum, long	- - - - -	1.14
Head, to clypeofrontal suture, long	- - - - -	0.87
Head, wide	- - - - -	1.02
Eyes diameter	0.272 × 0.289	
Antennae	19-jointed	
Pronotum, long	0.63; wide - - - -	0.97
Forewings, long	9.00; wide - - - -	2.80
Tibia iii, long	- - - - -	0.91

Soldier.

Distinguished from *C. flavus* by its smaller head and body, the former markedly narrowed anteriorly, long and narrow labrum (extending well beyond the middle of mandibles in the species under notice but not reaching the middle in *C. flavus*), smaller pronotum, the sides of which are more rounded. The antennae, which are incomplete, have 3rd joint smallest. It is also similar to *C. michaelsoni* Silv., from which it is distinguished by the head being distinctly more narrowed in front.

	Measurements.	mm.
Total length	- - - - -	4.00
Head, with mandibles, long	- - - - -	1.71
Head, to frontal opening, long	- - - - -	1.10
Head, to apex of labrum, long	- - - - -	1.53
Head, wide	- - - - -	0.91
Gula, at narrowest part, wide	- - - - -	0.272
Pronotum, long	0.34; wide - - - -	0.62
Tibia iii, long	- - - - -	0.68

Worker.

Colour.—Head clay-colour, with large whitish area on summit.

Head.—Rounded, widest in front, narrowed on the sides to the broadly rounded posterior margin, flat on vertex, with scanty short pale setae. Clypeus a little more than half as long as wide,

strongly convex, glabrous. Labrum short and markedly convex. Antennae 14-jointed; 3rd joint shortest and narrowest, closely fused with 4th; 5th and 6th nearly equal; 7th-13th broadly oval, 7th very little shorter than 13th; 14th a little longer and narrower than 13th.

Thorax.—Pronotum small, much narrower than head, rather deeply notched and bent up in front, antero- and posterolateral angles sharply rounded, posterior margin nearly straight, clothed with scanty pale setae, as on remainder of thorax and abdomen.

	Measurements.	mm.
Total length - - - - -	- - - - -	4.00
Head, to apex of labrum, long - - - - -	- - - - -	1.14
Head, to clypeofrontal suture, long - - - - -	- - - - -	0.85
Head, wide - - - - -	- - - - -	1.08
Pronotum, long 0.35; wide - - - - -	- - - - -	0.62

Localities.—South Australia: Barton (A. M. Lea); ?Victoria: Mallee District.

Described from a small colony comprising three alate imagos, three soldiers and several workers, from the South Australian Museum collection. The Victorian specimens include imagos collected at Redcliffs and Ouyen by Messrs. A. S. Cudmore and F. E. Wilson, and soldiers and workers collected at Piangil and Linga by the last-named gentleman and Mr. C. Oke respectively. The examples from Ouyen, which were captured at a light in October, have 18- 19-jointed antennae and are a little smaller than those in the type colony.

Type imago, soldier and worker in the South Australian Museum; paratypes in the National Museum of Victoria.

REFERENCES.

- HILL, G. F., 1921. *Proc. Linn. Soc. N.S.W.*, xlvii., pp. 433-456.
 ———, 1925. *Proc. Roy. Soc. Vic.*, n.s., xxxvii. (2) pp. 207-228.